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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/578,998	05/25/2000	Kaori Inoue	380153-62	7465

7590 10/23/2002

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EXAMINER

GURZO, PAUL M

ART UNIT PAPER NUMBER

2881

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n N .

09/578,998

Applicant(s)

INOUE ET AL.

Examiner

Paul Gurzo

Art Unit

2881

-- Th MAILING DATE f this c mmunication appears n th cover she t with the correspondence address --

## Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disp sition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Pri rity under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al. (5,531,198) and further in view of Miyai et al. (6,422,056).

Regarding claim 1, Adachi et al. teach quantitatively analyzing a plurality of components in a sample based on an absorption spectrum obtained by FTIR as well as calculating multi-component concentrations from a mixed gas spectrum using a quantitative algorithm (col. 2, lines 15-27). They fail to teach correcting for a change in spectrum due to a coexistent gas component, but Miyai et al. teach that one object of their invention is to provide a method for correcting the effect of a coexistent gas during a gas analysis (col. 3, lines 51-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include this step of correcting the concentrations so that it is possible to carry out a measurement with high precision.

Regarding claims 2 and 3, Miyai et al. teach measuring the coexistent gas using FTIR as well as a method other than FTIR (col. 1, lines 15-17). They teach applying the relationship at a

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fixed position, and the output from the gas analyzer used for measuring the objective component is corrected by the same correction (col. 4, lines 12-16). Further, they teach that a personal computer functions as an operation processing unit for obtaining the concentrations of the gas to be measured in a sample gas (col. 5, lines 41-45).

Claims 4-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al. (5,531,198) in view of Miyai et al. (6,422,056) and further in view of Yamagishi et al (6,370,936).

Regarding claim 4, the above-applied prior art does not explicitly teach the correcting step to correct the influence due to a difference in a base gas composition between an exhaust gas and a calibration gas. However, Yamagishi et al. teach that an exhaust gas is diluted with air, which acts as the calibration gas. The flow rate is the difference of the exhaust gas after diluting with air and the flow rate of the air (col. 1, lines 17-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include this step of correcting the influence so that it is possible to carry out a measurement with high precision.

Regarding claim 5, Miyai et al. teach the influences of coexistent H<sub>2</sub>O with respect to and CO and CO<sub>2</sub> (col.1, lines 40-55 and col. 2, lines 40-49). They teach that sensitivity calibrations of gas analyzers are carried out by standard gas produced on the basis of N<sub>2</sub> gas (col. 1, lines 50-55). Furthermore, Adachi et al. teach that the ingredients of the exhaust gas include NO (col. 7, lines 54-55).

Regarding claims 6-19, the above-applied prior art teaches on the ability to correct influences of coexistent H<sub>2</sub>O with respect to any one of CO, CO<sub>2</sub>, NO, or N<sub>2</sub>O. In addition, Miyai et al. teach the influence is approximated by the appropriate function, namely an order of

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primary-quarterly expression (col. 8, lines 5-8). Adachi et al. also teach that a general linear algebraic method can be used as means for determining the concentrations of the respective ingredients contained in the group of ingredients in the gas (col. 7, lines 67-68 and col. 8, lines 1-2). It is an obvious matter of design choice to approximate the influence of coexistent H<sub>2</sub>O with respect to the other gases that are present using linear and/or quadratic equations like previously taught.

Regarding claim 20, it is obvious that there is a change in the water concentration between the exhaust gas and calibration gas. Also, Miyai et al. teach that it is possible to effectively correct the effects of the components with high concentrations of H<sub>2</sub>O and components having variable concentrations in the sample gas, such as H<sub>2</sub>O in exhaust gas (col. 4, lines 49-56).


### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.



PMG  
October 3, 2002



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